

ANALYTICAL REPORT

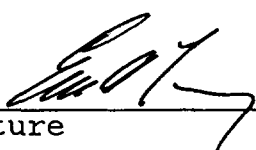
JOB NUMBER: 200424

Prepared For:

RMT
222 S. Riverside Plaza
Suite 820
Chicago, IL 60606

Attention: Rae Mindock

Date: 09/25/2000


Signature

Name: Eric A. Lang

Title: Project Manager

9/25/00
Date

Severn Trent Laboratories
2417 Bond Street
University Park, IL 60466-31

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STL Chicago
Herbicide Case Narrative

RMT
Riverdale Chemical
Job #: 200424-1
TCLP Herbicides

1. STL Chicago uses the following Gas Chromatographic system for the analysis of herbicides:

| <u>ID#</u> | <u>INSTRUMENT</u> | <u>COLUMN TYPE</u> | <u>DETECTOR</u> |
|------------|-------------------|--------------------|------------------|
| 31 | Varian 3400 | Rtx-5 | Electron Capture |
| 32 | Varian 3400 | Rtx-35 | Electron Capture |

2. This TCLP sample was extracted for TCLP Herbicides (2,4-D and 2,4,5-TP) based on SW846 method 8150B. The extracts were analyzed based on SW846 method 8151.
3. All required holding times were met for the extraction and analysis.
4. The method blanks were below the reporting limits for all target compounds.
5. Statistical control limits established for water samples have been applied TCLP matrix and are used as advisory limits.
6. The surrogate used for this analysis was DCAA. All surrogate recoveries were within statistical control limits.
7. The recovery for 2,4-D associated with the blank spike was biased low and below advisory limits with 41.6% recovery. The recovery for 2,45-TP was 88.3%.
8. A matrix spike was performed on this sample. The recovery for 2,4-D was biased low and below advisory limits with 28.6% recovery. The recovery for 2,45-TP was 74.6%.
9. All initial and continuing standard calibrations associated with this sample were in control for all target compounds.


Linda S. Mackley
Organics Section Manager

7-25-00
Date

SAMPLE INFORMATION

Date: 09/25/2000

Job Number.: 200424
Customer....: RMT
Attn.....: Rae Mindock

Project Number.....: 20000334
Customer Project ID....: RIVERDALE CHEMICAL
Project Description....: Riverdale Chemical

| Laboratory Sample ID | Customer Sample ID | Sample Matrix | Date Sampled | Time Sampled | Date Received | Time Received |
|-------------------------|-----------------------|------------------|-----------------|-----------------|------------------|------------------|
| 200424-1 | DSL7 | Soil | 09/15/2000 | 13:30 | 09/15/2000 | 14:35 |

| LABORATORY TEST RESULTS | | | | | | |
|---|---|-------------------|-----------------|-------|----------|------|
| Job Number: 200424 | Date: 09/25/2000 | | | | | |
| CUSTOMER: RMT | PROJECT: RIVERDALE CHEMICAL | ATTN: Rae Mindock | | | | |
| Customer Sample ID: DSL7 Date Sampled.....: 09/15/2000 Time Sampled.....: 13:30 Sample Matrix.....: Soil | | | | | | |
| Laboratory Sample ID: 200424-1 Date Received.....: 09/15/2000 Time Received.....: 14:35 | | | | | | |
| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | REPORTING LIMIT | UNITS | DATE | TECH |
| 1311 | TCLP Extraction TCLP Extraction, TCLP | Complete | | | 09/20/00 | pjm |
| 8151A | Herbicides | ND | 100 | ug/L | 09/22/00 | lsm |
| | 2,4-D, TCLP 2,4,5-TP (Silvex), TCLP | ND | 10 | ug/L | 09/22/00 | lsm |
| 8081A | Organochlorine Pesticide Analysis | | | | | |
| | gamma-BHC (Lindane), TCLP | ND | 2.5 | ug/L | 09/21/00 | lsm |
| | Heptachlor, TCLP | ND | 2.5 | ug/L | 09/21/00 | lsm |
| | Heptachlor epoxide, TCLP | ND | 2.5 | ug/L | 09/21/00 | lsm |
| | Endrin, TCLP | ND | 5.0 | ug/L | 09/21/00 | lsm |
| | Methoxychlor, TCLP | ND | 25 | ug/L | 09/21/00 | lsm |
| | Toxaphene, TCLP | ND | 50 | ug/L | 09/21/00 | lsm |
| | Chlordane, TCLP | ND | 10 | ug/L | 09/21/00 | lsm |
| 8150B | Extraction 8150B(Herbicides TCLP) Separatory Funnel Liq/Liq Extraction, TCLP | COMPLETE | | | 09/20/00 | lsm |
| 3510C | Extraction for TCLP (Chlor.Pest) Separatory Funnel Liq/Liq Extraction, TCLP | Complete | | | 09/21/00 | dak |

* In Description = Dry Wgt.

| | | | | | | | | |
|---------------------|-------------|------------|-----------------------------|-----------------|------|--------------------------|--|--|
| Job Number.: 200424 | | | QUALITY CONTROL RESULTS | | | Report Date.: 09/25/2000 | | |
| CUSTOMER: RMT | | | PROJECT: Riverdale Chemical | | | ATTN: Rae Mindock | | |
| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time | | |

| | | |
|---------------------------------|------------------|------------------|
| Test Method.....: 8151A | Units.....: ug/L | Analyst....: lsm |
| Method Description.: Herbicides | Batch.....: 3539 | |

| | | | | | | | | | | |
|----------------------------|--------------|-----------|------|-----------|------------|-------------|--------------|---|--------|---|
| MB | Method Blank | | 3538 | 10 | 09/22/2000 | 1217 | | | | |
| Parameter/Test Description | | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
| 2,4-D | | 0 | U | | | | | | | |
| 2,4,5-TP (Silvex) | | 0 | U | | | | | | | |

| | | | | | | | | | | |
|----------------------------|---------------------------|-----------|------------|-----------|------------|-------------|--------------|---|------------|---|
| LCS | Laboratory Control Sample | | 000GPLHERA | 3538 | 10 | 09/22/2000 | 1249 | | | |
| Parameter/Test Description | | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
| 2,4-D | | 0.2081 | | | 0.500000 | | 41.6 | | 48.0-131.0 | * |
| 2,4,5-TP (Silvex) | | 0.0883 | | | 0.100000 | | 88.3 | | 53.0-133.0 | |

| | | | | | | | | | |
|----------------------------|--------------------|---|-----------|------------|-------------|--------------|---|--------|---|
| EB1 | Extraction Blank 1 | | 3538 | 10 | 09/22/2000 | 1321 | | | |
| Parameter/Test Description | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
| 2,4-D | 0 | U | | | | | | | |
| 2,4,5-TP (Silvex) | 0 | U | | | | | | | |

| | | | | | | | | | | |
|----------------------------|--------------|-----------|------------|-----------|------------|-------------|--------------|---|--------|---|
| MS | Matrix Spike | | 000GPLHERA | 200424-1 | 10 | 09/22/2000 | 1425 | | | |
| Parameter/Test Description | | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
| 2,4-D | | 0.1429 | | | 0.500000 | 0 | 28.6 | | 48-131 | * |
| 2,4,5-TP (Silvex) | | 0.0746 | | | 0.100000 | 0 | 74.6 | | 53-133 | |

| | | |
|--|------------------|------------------|
| Test Method.....: 8081A | Units.....: ug/L | Analyst....: lsm |
| Method Description.: Organochlorine Pesticide Analysis | Batch.....: 3536 | |

| | | | | | | | | |
|----------------------------|--------------|---|-----------|------------|-------------|--------------|----------|---|
| MB | Method Blank | | 3506 | | | 09/21/2000 | 1426 | |
| Parameter/Test Description | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * Limits | F |
| gamma-BHC (Lindane) | 0 | U | | | | | | |
| Heptachlor | 0 | U | | | | | | |
| Heptachlor epoxide | 0 | U | | | | | | |
| Endrin | 0 | U | | | | | | |
| Methoxychlor | 0 | U | | | | | | |
| Toxaphene | 0 | U | | | | | | |
| Chlordane | 0 | U | | | | | | |

| QUALITY CONTROL RESULTS | | | | | |
|-------------------------|-------------|-----------------------------|--------------------------|-------------------|-----------|
| Job Number.: 200424 | | | Report Date.: 09/25/2000 | | |
| CUSTOMER: RMT | | PROJECT: Riverdale Chemical | | ATTN: Rae Mindock | |
| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date Time |

| | | | | | |
|-----|---------------------------|------------|------|--|-----------------|
| LCS | Laboratory Control Sample | 000HWLPTFA | 3506 | | 09/21/2000 1500 |
|-----|---------------------------|------------|------|--|-----------------|

| Parameter/Test Description | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|----------------------------|-----------|---|-----------|------------|-------------|--------------|---|------------|---|
| gamma-BHC (Lindane) | 0.011 | | | 0.010000 | | 110.0 | | 56.0-125.0 | |
| Heptachlor | 0.005 | | | 0.010000 | | 50.0 | | 50.0-129.0 | |
| Heptachlor epoxide | 0.010 | | | 0.010000 | | 100.0 | | 59.0-126.0 | |
| Endrin | 0.011 | | | 0.010000 | | 110.0 | | 30.0-154.0 | |
| Methoxychlor | 0.120 | | | 0.100000 | | 120.0 | | 38.0-149.0 | |
| Chlordane | 0.008 | | | 0.010020 | | 79.8 | | 68.0-118.0 | |

| | | | | | |
|-----|---------------------------|------------|------|--|-----------------|
| LCS | Laboratory Control Sample | 000HWLPTTA | 3506 | | 09/21/2000 1533 |
|-----|---------------------------|------------|------|--|-----------------|

| Parameter/Test Description | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|----------------------------|-----------|---|-----------|------------|-------------|--------------|---|------------|---|
| Toxaphene | 1.054 | | | 1.002000 | | 105.2 | | 65.0-138.0 | |

| | | | | | |
|-----|--------------------|--|------|--|-----------------|
| EB1 | Extraction Blank 1 | | 3506 | | 09/21/2000 1607 |
|-----|--------------------|--|------|--|-----------------|

| Parameter/Test Description | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|----------------------------|-----------|---|-----------|------------|-------------|--------------|---|--------|---|
| gamma-BHC (Lindane) | 0 | U | | | | | | | |
| Heptachlor | 0 | U | | | | | | | |
| Heptachlor epoxide | 0 | U | | | | | | | |
| Endrin | 0 | U | | | | | | | |
| Methoxychlor | 0 | U | | | | | | | |
| Toxaphene | 0 | U | | | | | | | |
| Chlordane | 0 | U | | | | | | | |

| | | | | | |
|----|--------------|------------|----------|--|-----------------|
| MS | Matrix Spike | 000HWLPTFA | 200424-1 | | 09/21/2000 1713 |
|----|--------------|------------|----------|--|-----------------|

| Parameter/Test Description | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|----------------------------|-----------|---|-----------|------------|-------------|--------------|---|--------|---|
| gamma-BHC (Lindane) | 0.011 | | | 0.010000 | 0 | 110.0 | | 56-125 | |
| Heptachlor | 0.006 | | | 0.010000 | 0 | 60.0 | | 50-129 | |
| Heptachlor epoxide | 0.010 | | | 0.010000 | 0 | 100.0 | | 59-126 | |
| Endrin | 0.011 | | | 0.010000 | 0 | 110.0 | | 30-154 | |
| Methoxychlor | 0.118 | | | 0.100000 | 0 | 118.0 | | 38-149 | |
| Chlordane | 0.009 | | | 0.010020 | 0 | 89.8 | | 68-118 | |

| | | | | | |
|----|--------------|------------|----------|--|-----------------|
| MS | Matrix Spike | 000HWLPTTA | 200424-1 | | 09/21/2000 1747 |
|----|--------------|------------|----------|--|-----------------|

| Parameter/Test Description | QC Result | Q | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|----------------------------|-----------|---|-----------|------------|-------------|--------------|---|--------|---|
| Toxaphene | 1.157 | | | 1.002000 | 0 | 115.5 | | 65-138 | |

Job Number.: 200424

SURROGATE RECOVERIES REPORT

Report Date.: 09/25/2000

CUSTOMER: RMT

PROJECT: RIVERDALE CHEMICAL

ATTN: Rae Mindock

Method.....: Organochlorine Pesticide Analysis
Method Code.....: 8081Batch.....: 3536
Analyst.....: lsm

| Surrogate | Units |
|---------------------------|-------|
| Decachlorobiphenyl (surr) | ug/L |

| Lab ID | Matrix | QC Type | Dilution | Result | True Value | Percent Recovery | Limits | Flag | Date | Time |
|----------|--------|---------|----------|--------|------------|------------------|-----------|------|------------|------|
| 3506 | TCLP | MB | | 0.031 | 0.04014 | 77.3 | 10.0-117. | | 09/21/2000 | 1426 |
| 3506 | TCLP | LCS | | 0.031 | 0.04014 | 77.3 | 10.0-117. | | 09/21/2000 | 1500 |
| 3506 | TCLP | LCS | | 0.029 | 0.04014 | 72.3 | 10.0-117. | | 09/21/2000 | 1533 |
| 3506 | TCLP | EB1 | | 0.038 | 0.04014 | 94.8 | 10.0-117. | | 09/21/2000 | 1607 |
| 200424-1 | TCLP | | | 0.045 | 0.04014 | 112.2 | 10.0-117. | | 09/21/2000 | 1640 |
| 200424-1 | TCLP | MS | | 0.041 | 0.04014 | 102.2 | 10.0-117. | | 09/21/2000 | 1713 |
| 200424-1 | TCLP | MS | | 0.044 | 0.04014 | 109.7 | 10.0-117. | | 09/21/2000 | 1747 |

| Surrogate | Units |
|-----------------------------|-------|
| Tetrachloro-m-xylene (surr) | ug/L |

| Lab ID | Matrix | QC Type | Dilution | Result | True Value | Percent Recovery | Limits | Flag | Date | Time |
|----------|--------|---------|----------|--------|------------|------------------|-----------|------|------------|------|
| 3506 | TCLP | MB | | 0.010 | 0.04012 | 24.9 | 15.0-130. | | 09/21/2000 | 1426 |
| 3506 | TCLP | LCS | | 0.020 | 0.04012 | 49.9 | 15.0-130. | | 09/21/2000 | 1500 |
| 3506 | TCLP | LCS | | 0.023 | 0.04012 | 57.4 | 15.0-130. | | 09/21/2000 | 1533 |
| 3506 | TCLP | EB1 | | 0.031 | 0.04012 | 77.3 | 15.0-130. | | 09/21/2000 | 1607 |
| 200424-1 | TCLP | | | 0.026 | 0.04012 | 64.8 | 15.0-130. | | 09/21/2000 | 1640 |
| 200424-1 | TCLP | MS | | 0.022 | 0.04012 | 54.9 | 15.0-130. | | 09/21/2000 | 1713 |
| 200424-1 | TCLP | MS | | 0.026 | 0.04012 | 64.8 | 15.0-130. | | 09/21/2000 | 1747 |

Method.....: Herbicides
Method Code.....: 8151Batch.....: 3539
Analyst.....: lsm

| Surrogate | Units |
|-------------|-------|
| DCAA (surr) | ug/L |

| Lab ID | Matrix | QC Type | Dilution | Result | True Value | Percent Recovery | Limits | Flag | Date | Time |
|----------|--------|---------|----------|--------|------------|------------------|-----------|------|------------|------|
| 3538 | TCLP | MB | 10 | 0.3772 | 5.0142 | 75.3 | 41.0-146. | | 09/22/2000 | 1217 |
| 3538 | TCLP | LCS | 10 | 0.4721 | 5.0142 | 94.2 | 41.0-146. | | 09/22/2000 | 1249 |
| 3538 | TCLP | EB1 | 10 | 0.4658 | 5.0142 | 93.0 | 41.0-146. | | 09/22/2000 | 1321 |
| 200424-1 | TCLP | | 10 | 0.4134 | 5.0142 | 82.5 | 41.0-146. | | 09/22/2000 | 1353 |
| 200424-1 | TCLP | MS | 10 | 0.4066 | 5.0142 | 81.2 | 41.0-146. | | 09/22/2000 | 1425 |

Job Number: 200424

LABORATORY CHRONICLE

Date: 09/25/2000

CUSTOMER: RMT

PROJECT: RIVERDALE CHEMICAL

ATTN: Rae Mindock

| Lab ID: 200424-1 | Client ID: DSL7 | Date Recvd: 09/15/2000 | Sample | Date: 09/15/2000 | | |
|------------------|-----------------------------------|------------------------|--------|------------------|--------------------|----------|
| METHOD | DESCRIPTION | RUN# | BATCH# | PREP # | DATE/TIME ANALYZED | DILUTION |
| 8150B | Extraction 8150B(Herbicides TCLP) | 1 | 3538 | | 09/20/2000 0000 | |
| 3510C | Extraction for TCLP (Chlor.Pest) | 1 | 3506 | | 09/21/2000 0000 | |
| 8151A | Herbicides | 1 | 3539 | 3538 | 09/22/2000 1353 | 10 |
| 8081A | Organochlorine Pesticide Analysis | 1 | 3536 | 3506 | 09/21/2000 1640 | |
| 1311 | TCLP Extraction | 1 | 3511 | | 09/20/2000 1630 | |

Glossary of LabNet Flags, Qualifiers and Abbreviations

Inorganic Qualifiers

- U Analyte was not detected at or above the reporting limit.
- < Not detected at or above the reporting limit
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B CLP: Result is less than the CRDL, but greater than or equal to the instrument detection limit.
- S Result was determined by the Method of Standard Additions.

Inorganic Flags

- ^ ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, MRL: Instrument related QC exceed the upper or lower control limits.
- H MB, EB: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- * LCS, LCD, MSD, MD, PS, PSD: Batch QC Exceeds the upper or lower control limits.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- 4 MS, MSD: The analyte present in the original sample 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial Dilution exceeds the control limits.
- W PS: Post-digestion spike was outside 85-115% control limits.
- + MSA correlation coefficient is less than 0.995.

Organic Qualifiers

- U Analyte was not detected at or above the reporting limit.
- ND Compound not detected
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- B Compound was found in the blank and the sample.
- M Manually integrated compound.
- Q Result was qualitatively confirmed, but not quantified.
- I Indicates the presence of an interference.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.

Organic Flags

- ^ MB, EB, MLE: Batch QC is greater than reporting limit.
- * LCS, LCD, CCV, MS, MSD, Surrogate, RS: Batch QC Exceeds the upper or lower control limits.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- P The lower of the two values is reported when the percent difference between the results of two GC columns is greater than 25%.
- A Concentration exceeds the instrument calibration range or below the reporting limit.

Abbreviations

| | |
|-----------|---|
| Batch | Designation given to identify a specific extraction, digestion, preparation set, or analysis set |
| CAP | Capillary Column |
| CCB | Continuing Calibration Blank |
| CCV | Continuing Calibration Verification |
| Contract | Contract laboratory identification code |
| CRA | Low Level Standard Check – GFAA; Mercury |
| CRI | Low Level Standard Check - ICP |
| Dil Fac | Dilution Factor |
| DL | Secondary dilution was performed |
| DL Fac | Detection Limit factor |
| DSH | Distilled Standard – High Level |
| DSL | Distilled Standard – Low Level |
| DSM | Distilled Standard – Medium Level |
| EB | Extraction Blank |
| ICB | Initial Calibration Blank |
| ICV | Initial Calibration Verification |
| IDL | Instrument Detection Limit |
| ISA | Interference Check Sample A |
| ISB | Interference Check Sample B |
| Job No. | The first six digits of the Sample ID which refers to a specific client, project and sample login group |
| LAB ID | An 8 number unique laboratory identification |
| LCD | Laboratory Control Standard Duplicate |
| LCS | Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest |
| MB | Method Blank or (PB) preparation blank |
| MD | Method Duplicate |
| MDL | Method Detection Limit |
| MLE | Medium Level Extraction Blank |
| MRL | Method Reporting Limit Standard |
| MSA | Method of Standard Additions |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| ND | Not Detected |
| PACK | Packed Column |
| PREPF | Calculation factor used by the Laboratory's Information Management System (LIMS) |
| PS | Post Spike |
| PSD | Post Spike Duplicate |
| RA | Re-analysis |
| RE | Indicates a re-extraction and analysis |
| RL | Reporting Limit |
| RPD | Relative Percent Difference of duplicate (unrounded) analyses |
| RRF | Relative Response Factor |
| RS | Reference Standard |
| RT | Retention Time |
| RTW | Retention Time Window |
| Sample ID | A 9 digit number unique for each sample; the first six digits are referred as the job number. |
| SCB | Seeded Control Blank |
| SD | Serial Dilution |
| UCB | Unseeded Control Blank |

NOTES:

- ♦ One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- ♦ Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters. All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- ♦ Reporting limits are adjusted for preparation sample size, sample dilutions and sample moisture content if analyzed on a dry weight basis.



2417 Bond Street
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Fax: 708-534-5211

Shaded Areas For Internal Use Only of

Contact: _____

Company: _____

Address: _____

Phone: _____

Fax: _____

PO#: _____

Quote: _____

| | |
|---|---|
| Package Sealed Yes <input checked="" type="radio"/> No | Samples Sealed Yes <input checked="" type="radio"/> No |
|---|---|

| | |
|--|---|
| Received on Ice Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Samples Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
|--|---|

Temperature °C of Cooler
un-chilled

Additional Analyses / Remarks

| |
|-----------------|
| Pesticides Only |
|-----------------|

TIME

TIME

COMMENTS:

1. HCl, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn Acetate, Cool to 4°
6. Cool to 4°
7. None

7,15,00

Courier: 45

Hand Delivered 

Bill of Lading: